

What is Claimed:

1. A method of selecting an error correction algorithm in a communications system, the method comprising:
5 dividing each time frame of a multi-frame into a plurality of time slots;
determining an error rate level of a communication channel based on a plurality of bearer data packets when received during said multi-frame; and
10 selecting an error correction algorithm from a plurality of error correction algorithms taking into account said error rate level.

2. The method of claim 1, wherein said plurality of
15 bearer data packets comprises traffic data.

3. The method of claim 2, wherein said error correction algorithm has an overhead level, and wherein the amount of said traffic data is inversely varied with said overhead.

20 4. The method of claim 1, and wherein said error rate level determination comprises correcting said plurality of bearer

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data packets and detecting a number of defective bearer data packets to obtain a current block error rate (BLER) level, and wherein said error correction algorithm determination is based on said current BLER level.

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5. The method of claim 4, wherein said error correction algorithm selection comprises setting a minimum BLER threshold level and a maximum BLER threshold level to create an acceptable BLER range, selecting a current error correction algorithm if said acceptable BLER range includes said current BLER level and selecting an error correction algorithm different from said current error correction algorithm if said acceptable BLER range does not include said current BLER level.

6. The method of claim 5, wherein said plurality of error correction algorithms comprise differing overhead levels, and said error correction algorithm determination further comprises selecting an error correction algorithm with a next lower overhead than that of said current error correction algorithm if said current BLER level is below said minimum BLER threshold level and selecting an error correction algorithm with a next higher overhead than that of said current error correction

algorithm if said current BLER level is above said maximum BLER threshold level.

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7. The method of claim 1, wherein said error rate level determination comprises detecting a number of bit errors in said plurality of bearer data packets to obtain a bit error rate (BER) level, and wherein said error rate level determination is based on said current BER level.

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8. The method of claim 7, wherein said error correction algorithm selection comprises setting at least one BLER threshold level to create a plurality of BER ranges corresponding to the plurality of error correction algorithms, and selecting an error correction algorithm that corresponds to the BER range that includes the current BER level.

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9. The method of claim 1, wherein each bearer data packet of said plurality of bearer data packets is respectively received during a time slot of said each time frame of said multi-frame, and wherein said error correction algorithm selection comprises selecting said error correction algorithm during the last time frame of said multi-frame.

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10. The method of claim 1, further comprising:
determining the dynamic quality of said communication
channel; and

5 adjusting the number of time frames in said plurality of
time frames based on said dynamic quality.

11. The method of claim 1, wherein said plurality of
error correction algorithms includes no error correction
algorithm.

12. The method of claim 1, wherein said plurality of
error correction algorithms includes no error correction
algorithm, a low-level error correction algorithm and a high-
level error correction algorithm.

13. The method of claim 1 wherein said plurality of
bearer data packets are wirelessly transmitted between a central
station and a remote station.

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14. A method of correcting transmission errors in a communications system comprising an FEC dynamic central station and an FEC dynamic remote station, the method comprising:

determining an error rate level of a communication channel between said FEC dynamic central station and said FEC dynamic remote station based on a plurality of received bearer data packets received during a previous plurality of time frames;

selecting an error correction algorithm from a plurality of error correction algorithms taking into account said determined error rate level;

transmitting a bearer data packet during a current time frame;

receiving said bearer data packet during said current time frame; and

correcting said bearer data packet.

15. The method of claim 14,

wherein said bearer data packet transmission comprises generating error correction data according to said selected error correction algorithm, and transmitting said error correction data with said bearer data packet; and

wherein said bearer data packet correction comprises correcting said bearer data packet according to said selected error correction algorithm.

5 16. The method of claim 15, wherein said bearer data packet transmission further comprises encoding a bearer data packet with said error correction data.

10 17. The method of claim 15, wherein said bearer data packet transmission further comprises appending a bearer data packet with said error correction data.

15 18. The method of claim 15, wherein said error rate level determination comprises correcting said plurality of bearer data packets and detecting a number of defective bearer data packets to obtain a current block error rate (BLER) level, and wherein said error correction algorithm determination is based on said current BLER level.


20 19. The method of claim 15, wherein said error rate level determination comprises detecting a number of bit errors in said plurality of bearer data packets to obtain a current bit

error rate (BER) level, and wherein said error rate level determination is based on said current BER level.

20. The method of claim 14, wherein said plurality of
5 bearer data packets and said bearer data packet are both
respectively transmitted by said FEC dynamic central station and
received by said FEC dynamic remote station, and said FEC dynamic
remote station performs said error rate level determination and
said error correction algorithm selection.

10 *at*
as 21. The method of claim 14, wherein one of said FEC
dynamic remote station and FEC dynamic central station transmits
a signal to another of said FEC dynamic remote station and said
FEC dynamic central station indicating said error correction
15 algorithm selection.

22. The method of claim 21, wherein said another of said
FEC dynamic remote station and said FEC dynamic central station
transmits a signal to said one of said FEC dynamic remote station
20 and said FEC dynamic central station approving or denying said
error correction algorithm selection.

 23. The method of claim 21, wherein said another of said FEC dynamic remote station and said FEC dynamic central station transmits a signal to said one of said FEC dynamic remote station and said FEC dynamic central station encoded in said bearer data
5 packet.

24. The method of claim 21, wherein said one of said FEC dynamic remote station and said FEC dynamic central station corrects said bearer data packet using said plurality of error
10 correction algorithms.

25. A method of correcting transmission errors in a communications system comprising an FEC dynamic central station and an FEC dynamic remote station, the method comprising:

15 transmitting a first plurality of bearer data packets during a first multi-frame;

receiving said first plurality of bearer data packets during said first multi-frame;

determining an error rate level of a communication

20 channel between said FEC dynamic central station and said FEC dynamic remote station based on said first plurality of bearer data packets;

selecting an error correction algorithm from a plurality of error correction algorithms taking into account said determined error rate level;

transmitting a second plurality of bearer data packets during a second multi-frame, said second plurality of bearer data packets being generated according to said selected error correction algorithm;

receiving said second plurality of bearer data packets during said second multi-frame; and

correcting said second plurality of bearer data packets according to said selected error correction algorithm.

26. The method of claim 25,

wherein said first bearer data packet transmission comprises generating error correction data according to an error correction algorithm of said plurality of error correction algorithms, generating error detection data according to an error detection algorithm, and transmitting said error correction data and said error detection data with said first plurality of bearer data packets; and

wherein said error rate determination further comprises correcting said first plurality of bearer data packets according

to said error correction algorithm to create a first plurality of
corrected bearer data packets, and detecting a number of
defective bearer data packets by detecting any residual errors in
said first plurality of corrected bearer data packets according
5 to said error detection algorithm to create a current BLER level.

27. The method of claim 25, wherein said error rate
determination further comprises detecting bit errors in said
first plurality of bearer data packets to create a current bit
error rate (BER) level.

28. The method of claim 25,
wherein said one of said FEC dynamic central station and
said FEC dynamic remote station perform said transmission; and

wherein another of said FEC dynamic central station and
said FEC dynamic remote station perform said reception, said
error rate level determination, said error correction algorithm
selection, and said correction of said second plurality of data
packets.

29. The method of claim 25,

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~~abx~~ wherein said one of said FEC dynamic central station and
said FEC dynamic remote station is said FEC dynamic central
station and said another of said FEC dynamic central station and
said FEC dynamic remote station is said FEC dynamic remote
5 station; and

wherein the method further comprises transmitting first
control data from said FEC dynamic remote station to said FEC
dynamic central station indicating said error correction
algorithm selection, and transmitting second control data from
10 said FEC dynamic central station to said FEC dynamic remote
station confirming said error correction algorithm selection.

30. A recordable medium comprising:

a computer program comprising steps for:

15 determining an error rate level of a communication
channel between a plurality of communications terminals based on
a plurality of bearer data packets when received; and

selecting an error correction algorithm from a
plurality of error correction algorithms taking into account said
20 determined error rate level.

31. The recordable medium of claim 30, wherein said computer program further comprises a step for directing one of said communications terminals and said another of said communications terminals to correct a received bearer data packet using said selected error correction algorithm.

32. The recordable medium of claim 30, wherein said error rate level determination step comprises determining said error rate level over a multi-frame, and wherein said error correction algorithm is selected during a frame subsequent to said multi-frame.

33. The recordable medium of claim 30, wherein said error rate level determination step comprises correcting said plurality of bearer data packets and detecting a number of defective bearer data packets to obtain a current block error rate (BLER) level, and wherein said error correction algorithm determination step is based on said current BLER level.

34. The recordable medium of claim 30, wherein said error rate level determination comprises detecting a number of bit errors in said plurality of bearer data packets to obtain a

current bit error rate (BER) level, and wherein said error rate level determination is based on said current BER level.

35. The recordable medium of claim 30, wherein said
5 computer program is embedded in a ROM chip.

~~36.~~ 36. A communications terminal, comprising:
a receiver;

an error correction decoder electrically coupled to said
10 receiver; and

a processor coupled to said error correction encoder,
said processor comprising a computer program comprising steps
for:

determining an error rate level of a communication
15 channel between a plurality of communications terminals based on
a plurality of bearer data packets when received during a multi-
frame; and

selecting an error correction algorithm from a
plurality of error correction algorithms taking into account said
20 determined error rate level.

37. The communications terminal of claim 36, further comprising:

an error detection decoder electrically coupled to said error correction decoder and said processor; and

5 wherein said error rate level determination step comprises directing said error correction decoder to correct said plurality of bearer data packets and directing said error detection decoder to detect a number of defective bearer data packets, and wherein said error correction algorithm determination step is based on said number of defective bearer data packets.

38. The communications terminal of claim 36, wherein said error rate level determination comprises directing said error correction decoder to detect a number of bit errors in said plurality of bearer data packets, and wherein said error rate level determination is based on said number of bit errors.

~~39.~~ 39. The communications terminal of claim 36, wherein
20 said computer program further comprises a step for directing said error correction decoder to correct a bearer data packet received

~~38~~ during a time frame subsequent to said multi-time frame using
said selected error correction algorithm.

40. The communications terminal of claim 36, further
5 comprising an antenna electrically coupled to said receiver.

41. The communications terminal of claim 36, further
comprising:

a transmitter;


10 an error correction encoder electrically coupled to said
transmitter and said processor;

wherein said computer program further comprises a step
directing said error correction encoder to generate another
bearer data packet according to another selected error correction
15 algorithm.

~~39~~ 42. A communications system comprising:

a communications terminal comprising computer software
comprising steps for:

20 determining an error rate level of a communication
channel between a plurality of communications terminals based on

 a plurality of bearer data packets when received during a multi-frame;

selecting an error correction algorithm from a plurality of error correction algorithms taking into account said
5 determined error rate level; and

correcting a bearer data packet when received during a frame subsequent to said multi-frame using said selected error correction algorithm.

10 43. The communications system of claim 42, wherein said error rate level determination step comprises correcting said plurality of bearer data packets and detecting a number of defective bearer data packets, and wherein said error correction
15 algorithm selection step comprises selecting said error correction algorithm in response to said number of defective bearer data packets.

20 44. The communications system of claim 42, wherein said error rate level determination step comprises detecting a number of bit errors in said plurality of bearer data packets to obtain, and wherein said error correction algorithm selection step

comprises selecting said error correction algorithm in response to said number of bit errors.

45. The communications system of claim 42, wherein said
5 communications terminal is a remote station.

46. The communications system of claim 42, wherein said
communications terminal is a base station.

47. The communications system of claim 42, wherein said
communications terminal is a wired communications terminal.

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